

**Observations of Secondary Proton Beams by the Ulysses
SWOOPS Plasma Detector**

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The Ulysses spacecraft during the period from September of 1994 to September of 1995 traveled from high Southern heliospheric latitudes to high Northern latitudes passing through perihelion at about 1.4 AU. For this period, we have analyzed data obtained when the magnetic field was approximately aligned with the radial direction from the Sun. For such periods, the field aligned motion of particles is determined from their energy, which corresponds to the direction in which the instrument has the best resolution in velocity space. In the fast wind at high latitudes, a secondary proton beam is typically present. We are investigating the dependence of the properties of the secondary beam on parameters such as distance from the Sun, local Alfvén speed, and type of solar wind flow.

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